

## CURRICULUM VITAE

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#### **EDUCATION:**

1962-65	Rensselaer Polytechnic Institute, Troy, NY	—	Physics
1965-69	University of Rochester, School of Medicine Rochester, NY	M.D. (with distinction in research)	Medicine
1969-71	Bronx Municipal Hospital Center, Bronx, NY	Intern/ Resident	Medicine
1971-73	University of California, San Francisco	Research Fellow	Clinical Pharmacology

#### **LICENSES AND CERTIFICATIONS:**

1971	Medical License, California
1974	Certified, American Board of Internal Medicine
1981	Certified, American Board of Medical Toxicology
1993	Certified, American Board of Clinical Pharmacology

#### **PRINCIPAL POSITIONS HELD:**

1973-74	University of California, San Francisco	Clinical Instructor Medicine
1974-81	University of California, San Francisco	Assistant Professor of Medicine and Psychiatry
1981-87	University of California, San Francisco	Associate Professor of Medicine and Psychiatry
1987-now	University of California, San Francisco	Professor of Medicine, Psychiatry and Biopharmaceutical Sciences
1983-now	University of California, San Francisco	Chief, Division of Clinical Pharmacology and Experimental Therapeutics
1994-now	University of California, San Francisco	Vice Chair, Dept. of Biopharmaceutical Sciences, School of Pharmacy

**ANCILLARY POSITIONS HELD CONCURRENTLY:**

1974–76	San Francisco General Hospital Medical Center	Director, Drug Detoxification
1979–now	California Poison Control Center, San Francisco	Consultant
1980–now	Northern California Occupational Health Center	Staff
1983–now	University of California, San Francisco	Director, Postdoctoral Fellowship Training Program in Clinical Pharmacology and Experimental Therapeutics
1999–2008	UCSF Comprehensive Cancer Center	Co-Leader, Tobacco Control Program
2003–present	Flight Attendants Medical Research Institute Bland Lane Center of Excellence on Second Hand Smoke at UCSF	Director

**HONORS AND AWARDS:**

1968	Alpha Omega Alpha
1988	American Society for Clinical Investigation
1988	Kaiser Award for Excellence in Teaching, Honorable Mention, University of California, San Francisco
1993	Association of American Physicians
2002–2008	Best Doctors in America, Clinical Pharmacology
1994	National Institute on Drug Abuse MERIT Award (Method to Extend Research in Time)
1996–97	President, Society for Research on Nicotine and Tobacco
1996–97	President, American Society for Clinical Pharmacology and Therapeutics
1996	Ove Ferno Award (for outstanding contributions to research on nicotine and tobacco)
1996	Alton Ochsner Award Relating Smoking and Health
1997	American Thoracic Society Presidential Commendation
1999	Rawls Palmer Progress in Medicine Award, American Society for Clinical Pharmacology and Therapeutics
2002	University of California, San Francisco, Annual Distinguished Clinical Research Lecturer
2006	Oscar B. Hunter Memorial Award in Therapeutics, American Society for Clinical Pharmacology and Therapeutics

**NAMED LECTURESHIPS:**

1986	University of Queensland Visiting Research Professor of Medicine
1994	University of North Carolina/Glaxo Joint Seminar in Pharmaceutics and Clinical Pharmacology
1995	Annual Lecturer, American Association of Forensic Sciences
1995	Mayo Clinic Distinguished Lecturer in Medical Sciences
1995	Master Lecture, Society for Research on Nicotine and Tobacco
1996	Visiting Professor in Clinical Pharmacology, Jefferson Medical College
1996	Lectureship in Clinical Pharmacology and Therapeutics, Ada Canyon Medical Education Consortium and Veterans Affairs Medical Center, Boise
1997	Pfizer Visiting Professorship in Clinical Pharmacology, Uniformed Services University of the Health Science
1999	William Au Visiting Professorship in Clinical Pharmacology, State University of New York Health Science Center at Syracuse
2000	First Tennessee Visiting Professor Lectureship, University of Tennessee, College of Pharmacy

2000 Lichfield Lecturer in Clinical Medicine, Oxford University  
 2002 Leon J. Goldberg Memorial Lecture, University of Chicago  
 2008 Sir Henry Dale Lecture, Johns Hopkins University School of Medicine

### **MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS:**

Academy of Behavioral Medicine Research	American Society for Pharmacology and Experimental Therapeutics
American Board of Medical Toxicology	Association of American Physicians
American Federation for Clinical Research	California Thoracic Society
American Heart Assn, Council on Hypertension	Society for Research on Nicotine and Tobacco
American Society for Clinical Investigation	Western Association of Physicians
American Society of Clinical Pharmacology and Therapeutics	Western Society of Clinical Research

### **PROFESSIONAL ACTIVITY:**

#### **PROFESSIONAL ORGANIZATION ACTIVITIES:**

1979-81	Research Society on Alcoholism	Program Committee
1981-now	American Heart Assn, California Affiliate	Fellowship and Grant Study Sections
1982-84	American Society for Clinical Toxicology	Abstract Reviewer
1982-84	American College of Cardiology	Abstract Reviewer
1984-85	American Society for Clinical Pharmacology and Therapeutics	Membership Committee
1985-86	Council on Clinical Pharmacology	Member, Working Group on Accreditation of Clinical Pharmacology Training Programs
1985-88	California Lung Association	Committee on Smoking, Representative of California Thoracic Society
1986-87	American Society for Clinical Pharmacology and Therapeutics	Committee on Alcohol and Drug Dependence
1987-94	American Society for Clinical Pharmacology and Therapeutics	Scientific Program Committee
		Nominating Committee
		Medical Education Committee
		Steering Committee on Substance Abuse
1987	American College of Physicians, Medical Knowledge Self-Assessment Program	Clinical Pharmacology Committee Member
1989-90	American Society for Clinical Pharmacology and Therapeutics	Vice President
1990-91	American Society for Clinical Pharmacology and Therapeutics	Scientific Program Vice Chairman
1991-now	American Society for Clinical Pharmacology and Therapeutics	Scientific Program Committee Chairman
		Member, Board of Directors
1992-1995	American Society for Clinical Pharmacology and Therapeutics	Chair, Committee on Substance Abuse
1996-97	American Society for Clinical Pharmacology and Therapeutics	President
1996-97	Society for Research on Nicotine and Tobacco	President
1996-97	Western Association of Physicians	Councilor
1996-now	American Board of Clinical Pharmacology	Member

1995-98	American Society for Pharmacology and Experimental Therapeutics, Clinical Pharmacology Executive Committee	Member
1998-2000	American Board of Clinical Pharmacology	Board of Directors
2004-2009	Society for Research on Nicotine and Tobacco	Chair, Awards Committee
2006-now	American Society for Clinical Pharmacology and Therapeutics	Government Affairs Committee

**SERVICE TO PROFESSIONAL PUBLICATIONS:****Editorial Board:**

American Journal of Medicine	Drug Therapy
Archives of Environmental Health	Journal of Smoking Related Disorders
Biomarkers in Medicine	International Journal of Clinical Pharmacology and Therapeutics
Cardiovascular Drugs and Therapy	Pharmacogenomics Journal
Clinical Pharmacology and Therapeutics	
Drug Safety	

**Ad hoc referee for:**

Acta Paediatrica	Chemical Research in Toxicology
Addiction	Chest
American Journal of Cardiology	Circulation
American Journal of Cardiovascular Drugs	Clinical Chemistry
American Journal of Clinical Nutrition	Clinical Drug Investigation
American Journal of Emergency Medicine	Clinical Pharmacokinetics
American Journal of Epidemiology	Clinical Pharmacology and Therapeutics
American Journal of Hypertension	CNS Drugs
American Journal of Kidney Diseases	Digestive Diseases and Sciences
American Journal of Medicine	Drug and Alcohol Dependence
American Journal of Obstetrics and Gynecology	Drug Investigation
American Journal of Public Health	Drug Metabolism and Disposition
American Journal Respiratory and Critical Care Med.	Drug Safety
American Rev. Respiratory and Critical Care Medicine	Drugs
Analytical Biochemistry	European Journal of Clinical Pharmacology
Annals of Behavioral Medicine	European Journal of Epidemiology
Annals of Emergency Medicine	European Journal of Pediatrics
Annals of Epidemiology	European Journal of Pharmaceutical Sciences
Annals of Internal Medicine	Experimental and Clinical Psychopharmacology
Archives of Environmental Health	Health Psychology
Archives of General Psychiatry	Hypertension
Archives of Environmental Health	Int Journal of Clinical Pharmacology and Therapeutics
Archives of General Psychiatry	Int Journal of Obesity and Related Metabolic Disorders
Archives of General Psychiatry	Int Journal of Occupational and Environmental Health
Biological Psychiatry	Int Journal of Tuberculosis and Lung Disease
Biomarkers	Journal of Acquired Immune Deficiency Syndromes
British Journal of Addiction	Journal of the American College of Cardiology
British Journal of Clinical Pharmacology	Journal of the American Medical Association
Canadian Journal of Clinical Pharmacology	Journal of Analytical Toxicology
Cancer Letters	Journal of Cardiovascular Pharmacology
Cancer Research	Journal of Clinical Investigation
Carcinogenesis	Journal of Clinical Oncology
Cardiovascular Drugs and Therapy	Journal of Clinical Psychopharmacology
Journal of Consulting and Clinical Psychology	New England Journal of Medicine

Journal of Infectious Diseases	Nicotine and Tobacco Research
Journal of Investigative Medicine	Pediatrics
Journal of the National Cancer Institute	Pharmaceutical Research
Journal of Occupational Medicine	Pharmacology, Biochemistry and Behavior
Journal of Pharmaceutical Sciences	Pharmacogenetics
Journal of Pharmacokinetics and Biopharmaceutics	Pharmacogenomics Journal
Journal of Pharmacology & Experimental Therapeutics	Physiology and Behavior
Journal of Toxicology-Clinical Toxicology	Preventive Medicine
Kidney International	Psychopharmacology
Laboratory Investigation	Psychosomatic Medicine
Life Sciences Journal	Risk Analysis
Mayo Clinic Proceedings	Science
Medical Letter	Tobacco Control
Metabolism	Toxicology and Applied Pharmacology
Nature Clinical Practice: Gastroenterology and Hepatology	Transactions on Biomedical Engineering
Naunyn-Schmiedeberg's Archives of Pharmacology	Western Journal of Medicine
Neuropsychopharmacology	Xenobiotica

**OTHER PROFESSIONAL SERVICE:**

1975–76	San Francisco Coordinating Council for Drug Abuse	Member
1976–77	State of California Alcohol Research Center, Biomedical Research Advisory Panel	Member
1980–now	California Research Advisory Panel, Therapeutic Use of Marijuana Trial, San Francisco, CA	Consultant
1981	Institute on Medicine, Committee on Health Hazards of Marijuana, New York, NY	Consultant
1982–now	U.S. Department of Labor, Workers Compensation Program	Consultant in Medical Toxicology
1982–84	National Institute on Drug Abuse	Ad hoc Grant Reviewer
1983	National Institute on Aging	Ad hoc Site Visitor Grant Reviewer
1983	U.S. Federal Trade Commission	Expert Testimony
1984	San Mateo County Medical Association	Lecturer on Passive Smoking and Health
1985–94	Department of Veterans Affairs	Ad hoc Grant Reviewer
1985	Addiction Research Foundation of Toronto	Ad hoc Grant Reviewer
1986	U.S. Surgeon General's Advisory Committee on the Health Consequences of Smokeless Tobacco	Technical Consultant (Chapter author)
1986	U.S. Surgeon General's Report on Health Consequences of Cigarette Smoking: Health Effects of Involuntary Smoking	Contributing Author
1986–87	Clove Cigarette Scientific Advisory Board Dept of Health Services, State of California	
1987	Visiting Professor of Clinical Pharmacology, Shanghai Medical University	
1987	U.S. Surgeon General's Report on Smoking and Health: Nicotine Addiction	Scientific Editor
1987	General Clinical Research Centers, NIH	Ad hoc Reviewer
1987	National Institute on Dental Research	Ad hoc Reviewer
1988	National Cancer Institute	Special Study Section
1988–92	Pharmacology Study Section, National Institutes	Member

	of Health	
1992	Workshop on the Health Effects of Environmental Tobacco Smoke, California Environmental Protection Agency and California Air Resources Board	Invited Speaker
1992	University of Minnesota, Substance Abuse Program	Consultant
1990–93	U.S. Protection Agency Science Advisory Board (Passive smoking)	Member
1991–95	San Francisco Substance Abuse Treatment Research Unit	Science Advisory Group
1992–96	Collaborative European Antismoking Evaluation (CEASE Trial)	Member Scientific Committee
1992–94	(b) (4)	Scientific Advisory Board
1993–95	Stiftung für Verhoften und Umwelt (Foundation for Behavior and Environment, Munich)	Ad hoc Grant Reviewer
1994	Israel Science Foundation	Ad hoc Grant Reviewer
1994	National Institute on Drug Abuse	Ad hoc Grant Reviewer
1993–95	UCSF AIDS Clinical Research Center	Ad hoc Grant Reviewer
1993–94	Institute of Medicine, Committee on Preventing Nicotine Addiction in Children and Youths	Member
1994	National Cancer Institute, Ad Hoc Committee of President's Cancer Fund — Conference on: The FTC Method for Determining Tar, Nicotine and Carbon Monoxide Levels in Cigarettes	Invited Speaker
1994–95	U.S. Occupational Safety and Health Administration	Consultant/Expert Testimony
1994–95	U.S. Food and Drug Administration	Consultant
1996–2005	United States Pharmacopeia, Clinical Toxicology and Drug Abuse Expert Advisory Panel	Member
1995	National Institute on Drug Abuse	Special Study Section
1996	Canada's Expert Committee on Cigarette Modifications	Member
1994–now	(b) (4), Pharmacy and Therapeutics Committee	Member
1996–98	Acute Myocardial Infarction and Use of Nicotine Patches Study, University of Pennsylvania	Scientific Advisory Board
1997	United Nations Conference on Trade and Development, Round Table on Social and Economic Aspects of Reduction of Tobacco Smoking by Use of Alternative Nicotine Delivery Systems, Geneva	Speaker
1977	Johns Hopkins University Workshop on Environmental Tobacco Smoke	Speaker
1998	U.S. Surgeon General's Report on Tobacco Use Among U.S. Racial/Ethnic Minority Groups	Contributing Author
1998	University of Chicago, External Reviewer of Committee on Clinical Pharmacology	
1998	Canada Expert Committee on Cigarette Toxicity Reduction	Member
1999, 2001	NCI Cancer Center Program	Site Visitor/Grant Reviewer
2000–2001	Institute of Medicine, Committee to Assess the Science Base for Tobacco Harm Reduction	Consultant
2000–2001	Society for Research on Nicotine and Tobacco and World Health Organization Treatobacco.net Project (Web-based Smoking Cessation Database)	Chair, Safety Section
2001	Imperial Cancer Research Fund (UK)	Program Reviewer, London and Oxford

2001	U.S. Surgeon General's Report on Women and Smoking	Contributing Author
2001	Committee on Health, California State Senate — Testimony on Health Hazards of Dietary Supplements	
2001	NCI Monograph 13. Risks Associated with Smoking Cigarettes with Low Machine-Measured Yields of Tar and Nicotine	Co-Scientific Editor
2003-now	Robert Wood Johnson Foundation, Smoking Cessation Leadership Center	National Advisory Committee Member
2003	Veterans Affairs Merit Award Grant Reviewer	
2003	NIDA Special Emphasis Panel	Grant Reviewer
2004	Government of Canada, Meeting of Ministerial Advisory Council on Tobacco Control, Toronto	Invited Speaker
2003	NIH Biobehavioral and Behavioral Processes, Integrated Review Group	Ad hoc grant reviewer
2004	National Cancer Institute/American Legacy Foundation Examination of Light and Intermittent Smokers Meeting	Invited Speaker
2005	National Institute on Drug Abuse, Training and Career Development Review Group	Ad hoc grant reviewer
2005	National Institute on Drug Abuse, Board of Scientific Counselors for Intramural Research Program, Baltimore	Member, Program Reviewer
2005- 2009	National Cancer Institute/National Institute on Drug Abuse Transdisciplinary Tobacco Use Research Center Program	External Advisor
2005–2007	Strategic Dialogue on Tobacco Harm Reduction Working Group	Member
2005-2007	Institute of Medicine, Committee on Reducing Tobacco Use: Strategies, Barriers and Consequences	Member
2006-2009	U.S. Surgeon General's Report on Smoking and Health: How Tobacco Causes Disease – The Biology and Behavioral Basis For Tobacco-Attributable Disease	Section Editor
2006-2008	U.S. Public Health Service Clinical Practice Guideline: Treating Tobacco Use and Dependence	Board Member
2008	NIH Clinical Special Emphasis Panel in Digestive Disease	Grant reviewer
2008-2009	Institute of Medicine, Committee on Smoking in the Military	Member
2008-2009	Institute of Medicine, Committee on Secondhand Smoke and Acute Coronary Events	Member
2008	Interagency Committee on Smoking and Health	Invited Speaker
2009	NIDA Clinical Trials Network Workgroup on Genetic Testing in Nicotine Dependence Treatment	Invited Speaker
2009	NIDA Drug Abuse Vulnerability and Neurodevelopmental Effects of Early Exposure to Secondhand Smoke: Methodologic Issues and Research Priorities Workshop	Invited Speaker
2009	NCI/NIDA Nicotine Regulation Meeting	Invited Speaker
2009-present	U.S. Food and Drug Administration, Non-prescription Drug Advisory Panel	Chair

**SCIENTIFIC AND PROFESSIONAL MEETINGS & WORKSHOPS ATTENDED:****INTERNATIONAL**

- 4th International Catecholamine Symposium, Asilomar, CA, 1979
- Workshop on Measurement Issues in Cigarette Smoking Research, National Cancer and Drug Abuse Institutes, Bethesda, MD, 1982, Invited Speaker
- 5th World Conference on Smoking and Health, Winnipeg, Canada, 1983, Invited Speaker
- 2nd World Conference on Clinical Pharmacology and Therapeutics, Washington DC, 1983
- Anglo-American Workshop on Clinical Pharmacology, Airlie, Virginia, 1984
- 4th Scarborough Conference on Preventive Medicine: Current Clinical Issues in Smoking and Health, Scarborough, Maine, 1984, Invited Speaker
- World Congress on The Pharmacologic Treatment of Tobacco Dependence, New York, NY, 1985, Invited Speaker
- International Symposium on Tobacco Smoking and Health: A Neurobiologic Approach, Lexington, Kentucky, 1985, Invited Speaker
- Independent Scientific Committee on Smoking and Health Symposium: Nicotine, Smoking and the Low Tar Programme, London, England, 1986, Invited Speaker
- Symposium on Nicotine Replacement in the Treatment of Smoking, Bethesda, MD, 1987, Invited Speaker
- International Association for Dental Research Symposium on Smokeless Tobacco, Chicago, IL, 1987, Invited Speaker
- International Symposium on Nicotine, Gold Coast, Australia, 1987, Invited Speaker
- Second Cardiovascular Pharmacotherapy International Symposium, San Francisco, 1987, Invited Symposium Panelist
- Nicotinic Receptors in the CNS - Their Role in Synaptic Transmission, Uppsala, Sweden, 1988, Invited Speaker
- Third Cardiovascular Pharmacotherapy International Symposium, Kyoto, Japan, 1989, Organizing Committee
- Ciba Foundation Symposium: The Biology of Nicotine Dependence, London, 1989, Invited Speaker
- European Chemical Society Conference on Nicotine, Visby, Sweden, 1990, Invited Speaker
- International Symposium on Nicotine: Effects of Nicotine on Biological Systems - Hamburg, 1990, Organizing Committee and Invited Speaker
- Ciba Foundation Symposium: Cocaine: Scientific and Social Dimensions, London, 1991, Invited Speaker
- First International Conference on Smokeless Tobacco: Tobacco and Health; Columbus, 1991, Invited Speaker and Session Chairman
- Nordic Congress of Lung Diseases, Reykjavik, Iceland, 1992, Invited Speaker
- European Respiratory Society Annual Congress, Vienna, 1992, Invited Speaker
- European Respiratory Society Annual Congress, Florence, 1993, Invited Speaker
- Future Directions in Nicotine Replacement Therapy, Paris, 1993, Invited Speaker
- European Respiratory Society Annual Congress, Nice, 1994, Invited Speaker
- Collegium Internationale Neuropsychopharmacology, Symposium, Invited Speaker, Washington, 1994
- International Congress on Smoking Cessation, Glasgow, Invited Speaker, 1994
- International Symposium on Nicotine: The Effect of Nicotine on Biological Systems II, Montreal, Invited Speaker, 1994
- Symposium on Nicotine Addiction, Smoking Cessation and Hyperlipidemia; Taipai, Kaosiung, Taiwan, 1995
- Workshop on Nicotine as a Therapeutic Agent; Stiftung Immunitat und Umwelt, Frankfurt, Invited Speaker, 1996
- European Respiratory Society Annual Congress, Stockholm, Invited Speaker, 1996
- International Association for Dental Research, Symposium on Smokeless/Spit Tobacco, San Francisco, Invited Speaker, 1996
- European Society of Cardiology Symposium on the Diagnosis and Treatment of Nicotine Dependence, Vienna, Invited Speaker, 1998
- International Society for Research on Nicotine and Tobacco Meeting, Copenhagen, Invited Speaker, 1998

WHO Conference on Regulation of Tobacco Products and Tobacco Dependence Treatment Products, Helsinki, Invited Speaker, 1999  
 European Institute of Oncology, Nicotine Meeting, Milan, Invited Speaker, 2000, 2001  
 European Association for Clinical Pharmacology and Therapeutics, Odense, Denmark, Invited Symposium Speaker, 2001  
 WHO Conference: Public and Private Sector Partnerships to Reduce Tobacco Dependence, Prague, Invited Speaker, 2001  
 International Council on Alcohol and Addiction Annual Meeting, Toronto, Invited Speaker, 2003  
 World Conference on Lung Cancer, Vancouver, Invited Speaker, 2003  
 European Respiratory Society Symposium on Tobacco Harm Reduction, Geneva, Invited Speaker, 2005  
 Smoking and Reproductive Health Seminar, Badajoz Spain, Invited Speaker, 2006  
 1<sup>st</sup> Oceanic SRNT Meeting, Auckland, Invited Speaker, 2007  
 Spanish Respiratory Society, Barcelona, Invited Speaker, 2007  
 5<sup>th</sup> World Assembly on Tobacco Counters Health, Delhi, Invited Speaker, 2007  
 SRNT Europe, Annual Conference, Rome, Invited Speaker, 2008

## NATIONAL

American Federation for Clinical Research, 1973, 1974, 1980, 1981  
 American Society for Clinical Pharmacology and Therapeutics, 1973-1981, 1986-2001  
 American Society for Pharmacology and Experimental Therapeutics, 1975, 1978, 1997  
 American Association for Clinical Toxicology, 1981, 1983; invited speaker, 1985  
 Winter Conference on Brain Research, 1979-81  
 American College of Neuropsychopharmacology, Invited Panelist, 1982  
 American Psychological Association, Invited Panelist, 1983  
 American Heart Association Annual Meeting, 1985  
 American Thoracic Society, Invited Panelist, 1985  
 American Psychological Association, Invited Address, 1985  
 Smoking Relapse Workshop, National Heart, Lung and Blood Institute, Bethesda, Maryland, 1985, Invited Speaker  
 Workshop on Effects of Tobacco Smoke on Pulmonary Cells and on Synthesis and Regulation of Pulmonary Macromolecules, National Heart, Lung and Blood Institute, Bethesda, MD, 1986, Invited Speaker  
 National Institute of Health Consensus Development Conference on Health Implications of Smokeless Tobacco Use, Bethesda, Maryland, 1986, Invited Speaker  
 U.S. Environmental Protection Agency - Center for Disease Control Cotinine Analytical Workshop, Research Triangle Park, NC, 1986, Invited Speaker  
 National Cancer Institute Workshop on Biochemical Measures of Tobacco Smoke Exposure, San Francisco, 1986, Invited Participant  
 Workshop on Environmental Protection Agency Indoor Air Assessment Document, Boston, 1987, Invited Participant  
 American Society for Clinical Pharmacology and Therapeutics, Invited Symposium Speaker, Orlando, 1987  
 National Cancer Institute, Workshop on the Treatment of Tobacco Addiction, Bethesda, 1988, Invited Participant  
 American Association for Advancement of Science, Symposium Speaker, San Francisco, 1989  
 American Psychiatric Association, Symposium Speaker, San Francisco, 1989  
 American Society for Clinical Pharmacology and Therapeutics, Workshop on Problem-Based Learning as a Method for Teaching Clinical Pharmacology and Therapeutics in Medical School, San Francisco, 1990, Co-organizer and Speaker  
 Center for Indoor Air Research, Workshop on Environmental Tobacco Smoke Generation and Exposure; Baltimore, 1990, Invited Speaker  
 Memphis State University and National Heart, Lung, and Blood Institute Workshop on Smoking and Body Weight, Memphis, 1990, Invited Speaker

American Society for Addiction Medicine, 3rd National Conference on Nicotine Dependence, San Diego, 1990, Invited Speaker

Johns Hopkins University, Workshop on New Developments in Nicotine Delivery Systems, Baltimore, 1990, Invited Speaker

National Institute on Drug Abuse Workshop, Drug Craving: Review of the Concept, Baltimore, 1991, Invited Speaker

American Association of Pharmaceutical Scientists, Annual Meeting; Symposium, Pharmacokinetics of Drug Delivery Through the Skin, Washington, 1991, Invited Speaker

American Lung Association/American Thoracic Society, Annual Meeting; Symposium, Understanding Cigarette Smoking Addiction from the Molecular Therapy and Behavioral Levels, Anaheim, 1991, Invited Speaker

National Medical Association, Symposium Speaker, San Francisco, 1992

American Society for Addiction Medicine, 5th National Conference on Nicotine Dependence, Symposium, Nicotine as a Potential Therapeutic Agent, Seattle, 1992, Invited Speaker

American Association of Pharmaceutical Scientists, Annual Meeting, Symposium, Time-Dependent Effects on Drug Action, 1992, Invited Speaker

Society of Behavioral Medicine, Symposium, Use of Transdermal Nicotine Systems with Special Populations, San Francisco, 1993, Invited Speaker

Johns Hopkins University Workshop: Issues in Smoking Cessation: Who Quits, Who Pays? Washington, Invited Speaker, 1993

California Society of Addiction Medicine, Invited Speaker, 1993, 1994, 2000

National Institute on Drug Abuse Technical Review: Metabolism, Pharmacokinetics and Pharmacodynamics of Drugs of Abuse, San Diego, Invited Speaker, 1994

American Psychiatric Association, Symposium, Caffeine, Invited Speaker, 1994

American Association for the Advancement of Science, Symposium: New Advances in Transdermal Drug Delivery, Invited Speaker, 1994.

American Society for Clinical Pharmacology and Therapeutics, Featured Lecture, 1995

North American Congress of Clinical Toxicology, Annual Meeting, Invited Plenary Speaker, 1995

Society for Research on Nicotine and Tobacco, Workshop on Nicotine Safety and Toxicity; Organizer and Speaker, 1995

American Society of Clinical Oncology/National Cancer Institute Symposium on Tobacco Addiction, Invited Speaker, 1996

Duke University Symposium on Eclipse and the Harm Reduction Strategy, Invited Speaker, 1996

American Health Foundation/National Cancer Institute Workshop on the Changing Mortality Rates of Tobacco-Related Disease, Invited Speaker, 1996

American Society for Clinical Pharmacology, Symposia on Genetics of Alcoholism and Substance Abuse, Invites Speaker, 1996

American Society of Addiction Medicine, National Conference of Nicotine Dependence, Invited Speaker, 1996, 1997

American College of Neuropsychopharmacology, Symposium on Controversies in Nicotine and Tobacco Smoking Actions, Invited Speaker, 1996

National Institute on Drug Abuse Symposium, San Diego, Invited Speaker, 1996

American Association of Addiction Psychiatry, Annual Meeting, Symposium, Invited Speaker, 1996

Society for Research on Nicotine and Tobacco, Annual Meeting, 1995-2001

State of California Tobacco-Related Diseases Research Program Annual Meeting, 1997, Co-Chairperson

National Institute on Drug Abuse Conference, "Addicted to Nicotine: A National Research Forum", Bethesda, Invited Speaker, 1998

American Society of Addiction Medicine, National Conference on Nicotine Dependence, Research Roundtable and Invited Speaker, 1998

American Society of Addiction Medicine, National Conference on Nicotine Dependence, Research Roundtable and Plenary Speaker, 1999

Mayo Clinic Nicotine Dependence Seminar, Invited Speaker, 1999

American Association for Cancer Research Annual Meeting, Invited Speaker, 1999  
 American Society of Preventive Oncology Annual Meeting, Invited Speaker, 1999  
 Society for Research on Nicotine and Tobacco Annual Meeting, San Diego, Plenary Speaker, 1999  
 NICHD and Smoke-Free Families National Program, Workshop on the Use of Pharmacotherapies for Smoking Cessation During Pregnancy, Invited Speaker, 1999  
 American Chemical Society Annual Meeting, Invited Symposium Speaker, 2000  
 M.D. Anderson Cancer Center, Cancer Research at the Millennium Symposium, Invited Speaker, 2000  
 American College of Preventive Medicine Annual Meeting, Invited Speaker, 2001  
 American Psychological Association Annual Meeting, Invited Speaker, 2001  
 Society for Behavioral Medicine Annual Meeting, Invited Symposium Speaker, 2001  
 NCI/NIDA Tobacco Harm Reduction Conference, Invited Speaker, 2001  
 NCI/NIDA Workshop on Medication Development for Smoking Cessation, 2001  
 University of Minnesota Symposium on Biomarkers for Tobacco Exposure, Invited Speaker, 2001  
 Society for Research on Nicotine and Tobacco Annual Meeting, Symposium Speaker, 2001, 2002  
 National Conference on Tobacco and Health Annual Meeting, Initial Symposium Speaker, 2002  
 American Association for Clinical Toxicology, Annual Meeting, Invited Symposium Speaker, 2002  
 First Conference on Menthol Cigarettes, Atlanta, Invited Speaker, 2002  
 American Society of Addiction Medicine, State of the Art in Addiction Medicine, Washington, Invited Speaker, 2003  
 Mayo Clinic Nicotine Dependence Conference, Invited Speaker, 2004  
 American Society for Clinical Pharmacology and Therapeutics Annual Meeting, Symposium Speaker, 2004  
 American Society for Pharmacology and Therapeutics Annual Meeting, Symposium Speaker, 2006  
 American Academy of Clinical Toxicology Annual Meeting, Symposium Speaker, 2006  
 American Society for Pharmacology and Experimental Therapeutics, Diversity Committee Symposium, Invited Speaker, 2008  
 Society for Research on Nicotine and Tobacco, Keynote Speaker, 2008  
 Committee on Problems of Drug Dependence, Annual Meeting, Symposium Speaker, 2009

## REGIONAL

Western Society for Clinical Research, 1978, 1979, 1981  
 Western Regional Meeting, American Association of Pharmaceutical Scientists, 1992, Invited Speaker  
 Western Association of Physicians, 1996, Invited Plenary Speaker  
 American Society for Pharmacology and Experimental Therapeutics, Great Lakes Chapter, 2008, Keynote Speaker  
 Priority Populations and Coalitions Conference, Marina Del Rey, 2006, Symposium Speaker  
 Tobacco Related Disease Prevention Research Investigators Conference, 2007, Featured Speaker

## OTHER INVITED LECTURES

1973–85 California Community Hospitals, numerous lectures on cardiovascular pharmacology, drug abuse and poisoning  
 1980 First North American Conference on the Effect of Disease States on Drug Pharmacokinetics, Vancouver, BC  
 1983 Syntex Pharmaceutical Corp., Palo Alto, CA, Research Seminar  
 1984 Addiction Research Foundation, Ontario, Canada, Research Seminar  
 1984 NIDA Addiction Research Center, Baltimore, MD, Research Seminar  
 1985 University of Arizona, Pharmacology Seminar  
 1985 University of Toronto, Clinical Pharmacology Seminar  
 1986 University of Minnesota, Pharmacology Seminar  
 1986 Uniformed Services University of the Health Sciences, Clinical Pharmacology Seminar  
 1987 University of Queensland; Biochemistry, Pharmacology and Physiology Seminar  
 1987 Shanghai Medical University, Campus-wide Seminar

- 1987 California Department of Health Services, Epidemiological Studies and Surveillance Section, Seminar
- 1987 Schering-Plough Pharmaceuticals, Research Seminar
- 1988 Pharmacia-Leo Pharmaceutics, Inc., Helsingborg, Sweden, Research Seminar
- 1988 Karolinska Institute, Clinical Pharmacology Seminar
- 1989 American Health Foundation, Valhalla, N.Y., Research Seminar
- 1989 University of Texas, Austin, School of Pharmacy, All-College Seminar Lecturer
- 1989 Veterans Administration Hospital, Boise, Research Seminar
- 1990 Uniformed Services University of the Health Sciences, Research Seminar
- 1990 Ciba-Geigy Pharmaceutical Company, Research Seminar
- 1990 Chicago Medical School, Research Seminar
- 1990 Institute of Pharmacology, University of Milan, Research Seminar
- 1991 Royal Society of Medicine Symposium, Cocaine as a Biological and Medical Problem, London, 1991, Invited Speaker
- 1992 University of California, Davis, Environmental Toxicology Research Seminar
- 1992 Duke University, Pharmacology–Toxicology Seminar
- 1992 University of Minnesota, Pharmacology Research Seminar
- 1992 University of California, Los Angeles, Medical Grand Rounds
- 1992 University of California, Berkeley, Graduate Course on Public Health Practice of Tobacco Control, Invited Lecturer
- 1993 Rush–Presbyterian–St. Luke’s Medical Center, Medical Grand Rounds, Chicago
- 1994 University of Utah, Pharmacology and Toxicology Seminar
- 1994 Stanford University, Medical Grand Rounds
- 1995 Jefferson Medical College, Philadelphia, Medical Grand Rounds; Pharmacology Research Seminar
- 1995 Salk Institute of Biotechnology/Industrial Associates (SIBIA), Research Seminar
- 1996 Hennipin County Medical Center, Minneapolis, Medical Grand Rounds
- 1997 University of Ferrara, Italy, Seminar in Program of Excellence in Clinical Pharmacology Series
- 1997 Medical College of Wisconsin, Pharmacology Seminar
- 1997 Indiana University School of Medicine, Medical Grand Rounds
- 1997 Baylor University, Clinical Pharmacology Consortium Seminar
- 1997 University of California, Berkeley, Nutritional Services Seminar
- 1998 Genentech Pharmaceutical Company, South San Francisco, Research Seminar
- 1998 Buck Center for Aging, San Rafael, CA; Public Lecture
- 1998 John Muir Medical Center, Walnut Creek, Medical Grand Rounds (UCSF Community Hospital Outreach Program)
- 1998 University of Texas, M.D. Anderson Cancer Center, Research Seminar
- 1998 National Cancer Institute, Cancer Center Site Visitor/Grant Reviewer
- 1998 University of Sydney, Australia, Invited Speaker
- 1998 University of Cincinnati Psychiatry Grand Rounds
- 1998 Wonderfest 98, San Francisco, Invited Speaker
- 1999 UCSF Biopharmaceutical Sciences Research Seminar
- 1999 Genentech, Inc., Research Seminar
- 1999 University of Colorado Cancer Center, Molecular Epidemiology of Lung Cancer Symposium, Invited Speaker
- 1999 University of Connecticut School of Medicine, Medical Grand Rounds and GCRC Research Seminar
- 2000 St. Jude Children’s Research Hospital, Research Seminar
- 2000 Oxford University, Department of Primary Health Care, Research Seminar
- 2000 University of Manitoba School of Medicine, Medical Grand Rounds and Pharmacology Research Seminar
- 2000 Georgetown University School of Medicine, Pharmacology Research Seminar
- 2000 University of Michigan Cancer Center, Research Seminar
- 2001 UCSF Pharmacogenomics Symposium for Clinical Investigators, Speaker

- 2001 Tulane University School of Medicine, Medical Grand Rounds
- 2001 Washington University School of Medicine, Department of Psychiatry Research Seminar
- 2002 University of Minnesota, Transdisciplinary Tobacco Research Center, Research Seminar
- 2002 NJCHD, Division of Epidemiology, Statutes and Prevention Research, Research Seminar
- 2003 University of Toronto, Pharmacology, Research Seminar
- 2003 University of Wisconsin Center for Tobacco Research and Intervention, Research Seminar
- 2004 University of Pennsylvania, Department of Pharmacology, Research Seminar
- 2004 Ernest Gallo Clinic and Research Center, Research Seminar
- 2005 Stanford University Department of Genetics Annual Scientific Meeting, Invited Speaker
- 2006 US Food and Drug Administration, Research Seminar
- 2006 University of Minnesota Transdisciplinary Tobacco Use Research Center, Research seminar
- 2006 University of Utah, Department of Pharmacology, Research Seminar
- 2007 Yale University, Transdisciplinary Tobacco Research Center, Research Seminar
- 2008 Bucknell University, Biology Research Seminar
- 2008 San Francisco Asthma Task Force Network, Invited Speaker
- 2008 Penn State Cancer Institute Symposium, Invited Speaker

#### POSTGRADUATE AND CONTINUING EDUCATION LECTURES:

- 1975 American Society G.I. Endoscopy Postgrad Course, Acapulco, Mexico
- 1976 Contra Costa Heart Association Postgrad Course, Concord, CA
- 1976 American College of Physicians Postgraduate Course in Hepatobiliary Disease, San Francisco, CA
- 1976 ACP Course in Clinical Pharmacology, San Francisco, CA
- 1976 ACP Northern California Regional Meeting, San Francisco, CA
- 1977 Alta Bates Hospital Continuing Education Program, Berkeley, CA
- 1978 Merritt Hospital, Postgrad Course in Application of Basic Science to Treatment of Heart Disease, Oakland, CA
- 1978 American Academy Family Practice Annual Meeting, San Francisco, CA
- 1981 Northern California Society for Hospital Pharmacists, Daly City, CA
- 1981 Kaiser Hospital, Medical Grand Rounds, San Francisco, CA
- 1981 California Association of Emergency Physicians, San Francisco, CA
- 1982 N.T. Enloe Memorial Hospital, Toxicology Symposium, Chico, CA
- 1985 California Association of Toxicologists
- 1986 Childrens Hospital, Medical Grand Rounds, San Francisco
- 1986 Kaiser Hospital, Medical Grand Rounds, San Francisco
- 1986 Hennepin County Medical Center, Medical Grand Rounds, Minneapolis, MN
- 1987 Santa Clara Valley Medical Center, Medical Grand Rounds, San Jose
- 1987 American College of Chest Physicians, Course in Critical Care
- 1987 Santa Rosa Community Hospital, Medicine Grand Rounds
- 1988 Veterans Administration Hospital, Martinez, Medical Grand Rounds
- 1989 American College of Physicians, Meet the Professor, San Francisco
- 1989 Veterans Administration Hospital, Boise, Medical Grand Rounds
- 1983–1985 American College of Cardiology Course in Advances in Heart Disease, San Francisco
- 1990 American College of Cardiology Course in Advances in Heart Disease, San Francisco
- 1990 American College of Emergency Physicians Symposium, Invited Speaker, Tucson
- 1991 Medical College of Pennsylvania, Advances in the Treatment of the Nicotine Dependent Patient, Palm Springs, 1991, Program Chairman and Speaker
- 1992 Harbor General Hospital, Family Medicine Grand Rounds
- 1992,1995, California Society of Addiction Medicine Review Course
- 2000
- 1993 Nicotine Replacement and Smoking Cessation: Strategies for Success, Marina Del Rey, Program Co–Chairman and Speaker

1993 Laguna Honda Hospital, Special Grand Rounds  
 1993 San Francisco Veterans Administration Medical Center, Medical Grand Rounds  
 1996 UCSF, Laboratory Medicine Grand Rounds  
 1996,1997 San Francisco General Hospital, Medicine, Pediatric Grand Rounds  
 1997 Laguna Honda Hospital, Geriatrics Grand Rounds  
 2003-2006 American College of Cardiology, Advances in Heart Disease, San Francisco  
 1998 Nursing Pain Association Conference on Pain: Negative Effects and Novel Therapies, Speaker  
 2001 UCSF Pharmacogenomics Symposium for Clinical Investigators, Speaker  
 2003 Laguna Honda Hospital Grand Rounds  
 2004 UCSF, Cardiology Grand Rounds  
 2004 UCSF, Department of Medicine Grand Rounds  
 2007 Mills-Peninsula Medical Center, Medical Grand Rounds  
 2007, 2008 San Francisco General Hospital, Medical Grand Rounds  
 2008 UCSF; Veterans Affairs Medical Center and San Francisco General Hospital, Medical Grand Rounds  
 2009 UCSF Cardiology Grand Rounds  
 2009 UCSF Pulmonary Grand Rounds

**UNIVERSITY SERVICE:****CAMPUS-WIDE:**

1978-82 Committee on Human Research (Vice Chairman, 1979-82)  
 1978-79 Committee on Research  
 1975-now (b) (6)

**SCHOOL OF MEDICINE:**

1979-83 Chairman, House Staff Committee, San Francisco General Hospital  
 1981-82 Educational Policy Committee  
 1975-now Various Faculty Search Committees  
 1995-2002 Third and Fourth Year Curriculum Committee  
 1996-1999 Department of Medicine, (b) (6)  
 2000-2004 Department of Medicine, (b) (6)  
 2001-2009 Department of Medicine, (b) (6)  
 2005-now Department of Medicine, Clinical Outcomes and Research Committee

**SAN FRANCISCO GENERAL HOSPITAL:**

1975-88 Pharmacy and Therapeutics Committee, Member  
 1988-now Pharmacy and Therapeutics Committee, Chairman  
 1976-77 Utilization Review Committee  
 1978-now Medical Advisory Committee, Bay Area Regional Poison Center  
 1984-88 Credentials Committee  
 1992-94 Research Committee  
 2002-now Research Committee  
 1992-94 Quality Assurance Committee  
 1997-2007 Chair, San Francisco Department of Public Health Pharmacy Council  
 2000-now Advisory Committee to the General Clinical Research Center at SFGH

**TEACHING:****CLINICAL TEACHING:**

1975-now Attending Physician, Medical Service, San Francisco General Hospital, 1-2 months/year

1976-84 Basic Clerkship in Medicine (Medicine 110) 56 hours/year  
 1974-now Subspecialty Rounds in Clinical Pharmacology-Toxicology  
 (Student and Resident Teaching)  
 1975-now Attending Physician, Cardiology Clinic, half day/week  
 1975-now Numerous medical staff conferences, grand rounds at SFGH, UCSF, VAMC, Mt. Zion

**FORMAL SCHEDULED CLASSES FOR UCSF STUDENTS:**

W/S	1981-2001	Pharmacology 130: Toxicology	3 lectures/year	200 students
S/F	1975	Medicine 140: Pathophysiology of Disease - Cardiovascular	2 lectures/course	10 students
S	1984-2001	Pharmacology 100B: Pharmacology for Medical Students	2 lectures/year	100 students
S	1987-now	Medicine 140: Pathophysiology of Disease - Clinical Pharmacology	Course organizer 4 weeks/120 hours	40-60 students
F	1999-2002	UC Berkeley/ UCSF Pharmacology Course	2 lectures/year	16 students

**POSTGRADUATE COURSES SPONSORED BY UCSF:**

1976 Perspectives in Clinical Pharmacology; Lecturer  
 1977-86, 1993 Advances in Internal Medicine; Lecturer, Clinical Pharmacology/Cardiology  
 1979-97 Postgraduate Course on Recognizing and Managing Poisonings and Toxicologic  
 Emergencies; Lecturer and Workshop Leader each year  
 1980-81 Symposium on Street Drugs; Lecturer (Conference given 3 times — S.F., Tahoe, L.A.)  
 1983, 1987 Advances in Pulmonary and Critical Care Medicine, San Francisco, CA  
 1984, 1986 Cancer Prevention - Strategies in the Workplace  
 1983-93 Occupational Medicine Intensive Residency  
 1987 Recent Advances in Occupational Cancer  
 1989 Critical Care Nursing: A Cornucopia of Clinical Issues  
 1990-92 Pharmacokinetics for Pharmaceutical Scientists  
 1992 UCSF Hong Kong Postgraduate Course  
 1992 Chinese Academy of Medical Science/Peking Union Medical College Postgrad Course, Beijing  
 1991-92 Design and Implementation of Clinical Trials  
 1992 Primary and Secondary Prevention in Coronary Heart Disease, Speaker and Co-Chairman  
 1993 Advances in Internal Medicine, San Francisco, Speaker  
 1993 Primary Care Medicine: Principles and Practice, San Francisco  
 1995-2003 Occupational and Environmental Medicine, Lecturer  
 1997 Advances in Emergency Medicine, San Francisco, Speaker  
 1998 Poisons, Bites and Environmental Toxins: Emergency Management and Treatment, Lecturer  
  
 1999-2001, UCSF Thoracic Oncology Conference, Invited Speaker  
 2000 Cannabis Therapy: Science, Medicine, and the Law, Invited Speaker  
 2003-2008 UCSF Advances in Heart Disease, Speaker

**K-AWARD JUNIOR FACULTY MENTORED:**

2000-2005	(b) (6)	MD
2008-now	(b) (6)	MD
2008 – now	(b) (6)	PhD

**POSTDOCTORAL STUDENTS SUPERVISED:**

1976-78	(b) (6)	M.D. (Research Trainee)
1975-77		, M.D. (Research Trainee)
1975-77		Pharm.D. (Research Trainee)
1977-79		M.D. (Research Trainee)
1979-81		M.D. (Research Trainee)
1980-81		M.D. (Research Trainee)
1981-82		M.D. (Visiting Scientist)
1984-85		M.D. (Research Trainee)
1984-85		Pharm.D. (Research Trainee)
1985-86		M.D. (Research Trainee)
1985-86		M.D. (Research Trainee)
1985-88		M.D. (Research Trainee)
1988-90		M.D. (Research Trainee)
1988-90		, M.D. (Research Trainee)
1988-91		, M.D. (Research Trainee)
1989-91		, M.D. (Research Trainee)
1989-91		, Ph.D. (Research Trainee)
1990-91		, M.D. (Visiting Scholar)
1992-94		, M.D. (Research Trainee)
1994-97		, M.D. (Visiting Scholar)
1994-97		M.D. (Research Trainee)
1997-98		M.D. (Research Trainee)
1998-2000		M.D. (Research Trainee)
1999-2000		M.D. (Research Trainee)
2002-2005		M.D. (Research Trainee)
2008-now		PhD (Research Trainee)

**DOCTORAL COMMITTEES:**

1993	(b) (6)
1995	
1995	
1995	
2001	
2003	
2006	
2006	
2006	
2008	

**RESEARCH AND CREATIVE ACTIVITY:****I. ORIGINAL ARTICLES:**

1. N. Benowitz and M. Rowland. Determination of lidocaine in blood and tissues. *Anesthesiol.* 39: 639-641, 1973.
2. N. Benowitz, R.P. Forsyth, K.L. Melmon, and M. Rowland. Lidocaine disposition kinetics in monkey and man. I. Prediction by perfusion model. *Clin. Pharmacol. Ther.* 16: 87-98, 1974.

3. N. Benowitz, R.P. Forsyth, K.L. Melmon, and M. Rowland. Lidocaine disposition kinetics in monkey and man. II. Effect of hemorrhage and sympathomimetic drug administration. *Clin. Pharmacol. Ther.* 16: 99-109, 1974.
4. M.M. Scheinman, A. Weiss, E. Shafton, N. Benowitz, and M. Rowland. Electrophysiologic effects of procaine amide in patients with intraventricular conduction delay. *Circulation* 49: 522-529, 1974.
5. K. Teramo, N. Benowitz, M.A. Heymann, K. Kahanpaa, A. Siimes, and A.M. Rudolph. Effects of lidocaine on heart rate, blood pressure and corticogram in the fetal sheep. *Am. J. Ob. Gyn.* 118: 935-949, 1974.
6. N.L. Benowitz and R.T. Jones. Cardiovascular effects of prolonged oral tetrahydrocannabinol administration in man. *Clin. Pharmacol. Ther.* 18: 287-297, 1975.
7. T.G. Tong, N.L. Benowitz, C.E. Becker, P.J. Forni, and U. Boerner. Phencyclidine poisoning. *JAMA* 234: 512-513, 1975.
8. N.L. Benowitz, R.T. Jones, and C.B. Lerner. Depression of growth hormone and cortisol response to insulin-induced hypoglycemia after prolonged oral delta-9-tetrahydrocannabinol administration in man. *J. Clin. Endocrinol. Metab.* 42: 938-941, 1976.
9. R.J. Lau, D.G. Tubergen, M. Barr, E.F. Domino, N. Benowitz, and R.T. Jones. Phytohemagglutinin-induced lymphocyte transformation in humans receiving delta-9-tetrahydrocannabinol. *Science* 192: 805-807, 1976.
10. K. Teramo, N. Benowitz, M.A. Heymann, and A.M. Rudolph. Gestational differences of lidocaine toxicity in the fetal lamb. *Anesthesiology* 44: 133-138, 1976.
11. N.L. Benowitz and R.T. Jones. Prolonged delta-9-tetrahydrocannabinol ingestion: Effects of sympathomimetic amines and autonomic blockades. *Clin. Pharmacol. Ther.* 21: 336-342, 1977.
12. N.L. Benowitz and R.T. Jones. Effect of delta-9-tetrahydrocannabinol on drug distribution and metabolism: Antipyrine, pentobarbital and ethanol. *Clin. Pharmacol. Ther.* 22: 259-268, 1977.
13. J.C. Ayus, J.F. Eneas, T.G. Tong, N.L. Benowitz, P.Y. Schoenfeld, K.L. Hadley, C.E. Becker, and M.H. Humphreys. Peritoneal clearance and total body elimination of vancomycin during chronic intermittent peritoneal dialysis. *Clin. Nephrol.* 11: 129-132, 1979.
14. J.A. Bachman, N.L. Benowitz, R.I. Herning, and R.T. Jones. Dissociation of autonomic and cognitive effects of THC in man. *Psychopharmacology* 61: 171-175, 1979.
15. N.L. Benowitz, W.K. Rogers, M. Schambelan, and M. Wilson. Adrenergic and cardiovascular effects of disulfiram. In: *Catecholamines: Basic and Clinical Frontiers*, edited by I.J. Kopin and J. Bachras. New York: Pergamon Press, pp. 1536-1538, Vol. 2, 1979.
16. N.L. Benowitz, J. Rosenberg, W. Rogers, J. Bachman, and R.T. Jones. Cardiovascular effects of intravenous delta-9-tetrahydrocannabinol: Autonomic nervous mechanisms. *Clin. Pharmacol. Ther.* 25: 440-446, 1979.
17. S.C. Peeke, R. Prael, R.I. Herning, W. Rogers, N.L. Benowitz, and R.T. Jones. Effect of disulfiram on cognition, subjective responses and cortical event-related potentials in nonalcoholic subjects. *Alcoholism: Clin. Exp. Res.* 3: 223-229, 1979.
18. S.M. Pond, M. Phillips, N.L. Benowitz, R. Galinsky, T. Tong, and C.E. Becker. The pharmacokinetics of diazepam in acute alcohol withdrawal. *Clin. Pharmacol. Ther.* 25: 832-836, 1979.
19. W. Rogers, N.L. Benowitz, J. Abbott, and K.M. Wilson. Effects of disulfiram on adrenergic function. *Clin. Pharmacol. Ther.* 25: 469-477, 1979.
20. N.L. Benowitz, C. Abolin, T. Tozer, J. Rosenberg, W. Rogers, S. Pond, P. Schoenfeld, and M. Humphreys. Evaluation of resin hemoperfusion for ethchlorvynol overdose. *Clin. Pharmacol. Ther.* 27: 236-242, 1980.
21. N.L. Benowitz, R. Byrd, M. Schambelan, J. Rosenberg, and M.F. Roizen. Dihydroergotamine treatment for orthostatic hypotension from Vacor rodenticide. *Ann. Int. Med.* 92: 387-388, 1980.
22. N.L. Benowitz, T.L. Nguyen, R.T. Jones, R.I. Herning, and J. Bachman. Metabolic and psychophysiological studies of cannabidiol-hexobarbital interactions. *Clin. Pharmacol. Ther.* 28: 115-120, 1980.

23. A.B. Fredericks and N.L. Benowitz. An abstinence syndrome follows administration of delta-9-tetrahydrocannabinol in rhesus monkeys. *Psychopharmacology* 71: 201-202, 1980.
24. S.M. Pond, T. Tong, N.L. Benowitz, and P. Jacob III. Enhanced bioavailability of pethidine and pentazocine in patients with cirrhosis of the liver. *Austr. New Zealand J. Med.* 10: 515-519, 1980.
25. J. Rosenberg, N.L. Benowitz, P. Jacob III, and K.M. Wilson. Disposition kinetics and effects of intravenous nicotine. *Clin. Pharmacol. Ther.* 28: 516-522, 1980.
26. T. Tong, N.L. Benowitz, and M.J. Kreek. Effects of disulfiram on methadone metabolism during methadone maintenance. *J. Clin. Pharmacol.* 201: 506-513, 1980.
27. J.J. Cogan, M.H. Humphreys, C.J. Carlson, N.L. Benowitz, and E. Rapaport. Acute vasodilator therapy increases renal clearance of digoxin in patients with congestive heart failure. *Circulation* 64: 973-976, 1981.
28. A.B. Fredericks and N.L. Benowitz. Cardiovascular and autonomic nervous system effects of chronic delta-9-tetrahydrocannabinol in the conscious rhesus monkey. *J. Pharmacol. Exp. Ther.* 216: 247-253, 1981.
29. E.R. Gritz, V. Baer-Weiss, N.L. Benowitz, H. Van Vunakis, and M.E. Jarvik. Plasma nicotine and cotinine concentrations in habitual smokeless tobacco users. *Clin. Pharmacol. Ther.* 30: 201-209, 1981.
30. P. Jacob III, J.F. Rigod, S.M. Pond, and N.L. Benowitz. Determination of methadone and its primary metabolite in biologic fluids using gas chromatography with nitrogen-phosphorus detection. *J. Anal. Toxicol.* 5: 292-295, 1981.
31. P. Jacob III, M. Wilson, and N.L. Benowitz. Improved gas chromatographic method for the determination of nicotine and cotinine in biologic fluids. *J. Chromatogr.* 222: 61-70, 1981.
32. K.S. Peters, T.G. Tong, K. Kurtz, and N.L. Benowitz. Diabetes mellitus and orthostatic hypotension resulting from ingestion of Vacor rat poison: endocrine and autonomic function studies. *West. J. Med.* 134: 65-68, 1981.
33. S.M. Pond, T. Tong, N.L. Benowitz, P. Jacob III, and J. Rigod. Presystemic metabolism of meperidine to normeperidine in normal subjects and patients with cirrhosis. *Clin. Pharmacol. Ther.* 30: 183-188, 1981.
34. T.G. Tong, S.M. Pond, M.J. Kreek, N.F. Jaffery, and N.L. Benowitz. Phenytoin-induced methadone withdrawal. *Ann. Int. Med.* 94: 349-351, 1981.
35. N.L. Benowitz, P. Jacob III, R.T. Jones, and J. Rosenberg. Interindividual variability in the metabolism and cardiovascular effects of nicotine in man. *J. Pharmacol. Exp. Ther.* 221: 368-372, 1982.
36. N.L. Benowitz, F. Kuyt, and P. Jacob III. Circadian study of blood nicotine concentrations during cigarette smoking. *Clin. Pharmacol. Ther.* 32: 758-764, 1982.
37. N.L. Benowitz, J. Osterloh, N. Goldschlager, G. Kaysen, S. Pond, and S. Forhan. Massive catecholamine release from caffeine poisoning. *JAMA* 248: 1097-1098, 1982.
38. P. Jacob III, J.F. Rigod, S.M. Pond, and N.L. Benowitz. Gas chromatographic analysis of meperidine and normeperidine: Determination in blood after a single dose of meperidine. *J. Pharmaceut. Sci.* 71: 166-168, 1982.
39. S.M. Pond, T.G. Tong, N.L. Benowitz, P. Jacob III, and J. Rigod. Lack of effect of diazepam on methadone metabolism in methadone-maintained patients. *Clin. Pharmacol. Ther.* 31: 139-143, 1982.
40. R.P. Simon, N.L. Benowitz, J. Bronstein, and P. Jacob III. Increased brain uptake of lidocaine during status epilepticus. *Neurology* 32: 196-199, 1982.
41. N.L. Benowitz, S.M. Hall, R.I. Herning, P. Jacob III, R.T. Jones, and A.-L. Osman. Smokers of low yield cigarettes do not consume less nicotine. *N. Engl. J. Med.* 309: 139-142, 1983.
42. N.L. Benowitz, F. Kuyt, P. Jacob III, R.T. Jones, and A.-L. Osman. Cotinine disposition and effects. *Clin. Pharmacol. Ther.* 34: 604-611, 1983.
43. D. Foliart, N.L. Benowitz, and C.E. Becker. Passive absorption of nicotine in flight attendants (letter). *N. Engl. J. Med.* 308: 1105, 1983.

44. W.A. Hargreaves, J. Tyler, J.A. Weinberg, J.L. Sorensen, and N. Benowitz. (-)-Alpha-acetyl-methadol effects on alcohol and diazepam use, sexual function and cardiac function. *Drug Alcohol Depend.* 12: 323-332, 1983.
45. R.I. Herning, R.T. Jones, N.L. Benowitz, and A.H. Mines. How a cigarette is smoked determines nicotine blood levels. *Clin. Pharmacol. Ther.* 33: 84-90., 1983
46. B.D. Kirby, J. Ham, H.B. Fairley, N. Benowitz, and M. Schambelan. Normotensive pheochromocytoma: Pharmacologic, paraneoplastic and anesthetic considerations. *West. J. Med.* 139: 221-225, 1983.
47. J.D. Levine, N.C. Gordon, T. Poole, and N. Benowitz. Relationship of duration of analgesia to opioid pharmacokinetics. *Brain Res.* 289: 391-394, 1983.
48. N.L. Benowitz and P. Jacob III. Nicotine and carbon monoxide intake from high- and low-yield cigarettes. *Clin. Pharmacol. Ther.* 36: 265-270, 1984.
49. N.L. Benowitz and P. Jacob III. Daily intake of nicotine during cigarette smoking. *Clin. Pharmacol. Ther.* 35: 499-504, 1984.
50. N.L. Benowitz, F. Kuyt, and P. Jacob III. Influence of nicotine delivery on the cardiovascular and hormonal effects of cigarette smoking. *Clin. Pharmacol. Ther.* 36: 74-81, 1984.
51. R.G. Hall, D.P.L. Sachs, S.M. Hall, and N.L. Benowitz. Two year efficacy and safety of rapid smoking therapy in patients with cardiac and pulmonary disease. *J. Consult. Clin. Psychol.* 52: 574-581, 1984.
52. S.M. Hall, R.I. Herning, R.T. Jones, N.L. Benowitz, and P. Jacob III. Blood cotinine levels as indicators of smoking treatment outcome. *Clin. Pharmacol. Ther.* 35: 810-814, 1984.
53. I.K. Inouye, B.M. Massie, N. Benowitz, P. Simpson, and D. Loge. Antihypertensive therapy with diltiazem: Comparison with hydrochlorothiazide. *Am. J. Cardiol.* 53: 1588-1592, 1984.
54. I. Inouye, B. Massie, N. Benowitz, P. Simpson, D. Loge and N. Topic. Monotherapy in mild to moderate hypertension: Comparison of hydrochlorothiazide, propranolol, and prazosin. *Am. J. Cardiol.* 27:24A-28A, 1984.
55. P. Jacob III, B.A. Elias-Baker, R.T. Jones, and N.L. Benowitz. Determination of cocaine in plasma by automated gas chromatography. *J. Chromatogr.* 306: 173-181, 1984.
56. P. Jacob III, C. Savanapridi, L. Yu, M. Wilson, A.T. Shulgin, N.L. Benowitz, B.A. Elias-Baker, S.M. Hall, R.I. Herning, R.T. Jones, and D.P.L. Sachs. Ion-pair extraction of thiocyanate from plasma and its gas chromatographic determination using on-column alkylation. *Anal. Chem.* 56: 1692-1695, 1984.
57. W. Meister, N.L. Benowitz, and L.Z. Benet. Unchanged absorption of digoxin tablets in patients with cardiac failure. *Pharmacology* 28: 90-94, 1984.
58. P. Pentel and N. Benowitz. Efficacy and mechanism of action of sodium bicarbonate in the treatment of desipramine toxicity in rats. *J. Pharmacol. Exp. Ther.* 230: 12-19, 1984.
59. M.C. Rowbotham, R.T. Jones, N.L. Benowitz, and P. Jacob III. Trazodone-oral cocaine interactions. *Arch. Gen. Psychiatry* 41: 895-899, 1984.
60. R.P. Simon, M.J. Aminoff, and N.L. Benowitz. Changes in plasma catecholamines after tonic-clonic seizures. *Neurology* 34: 255-257, 1984.
61. R.P. Simon, N.L. Benowitz, and S. Culala. Motor paralysis increases brain uptake of lidocaine during status epilepticus. *Neurology* 34: 384-387, 1984.
62. O.F. Woo, S.M. Pond, N.L. Benowitz and K.R. Olson. Benefit of hemoperfusion in acute theophylline intoxication. *J. Toxicol. Clin. Toxicol.* 22: 411-424, 1984.
63. N.L. Benowitz and P. Jacob III. Nicotine renal excretion rate influences nicotine intake during cigarette smoking. *J. Pharmacol. Exp. Ther.* 234: 153-155, 1985.
64. S.M. Hall, C. Tunstall, D. Rugg, R.T. Jones, and N. Benowitz. Nicotine gum and behavioral treatment in smoking cessation. *J. Consult. Clin. Psychol.* 53: 256-258, 1985.
65. K.R. Olson, N.L. Benowitz, O.F. Woo, and S.M. Pond. Theophylline overdose: Acute single ingestion vs. chronic repeated overmedication. *Am. J. Emerg. Medicine* 3: 386-394, 1985.
66. P.R. Pentel, R.W. Asinger, and N.L. Benowitz. Propranolol antagonism of phenylpropanolamine-induced hypertension. *Clin. Pharmacol. Ther.* 37: 488-494, 1985.

67. S.M. Pond, M.J. Kreek, T.T. Tong, J. Ragunath, and N.L. Benowitz. Altered methadone pharmacokinetics in methadone-maintained pregnant women. *J. Pharmacol. Exp. Ther.* 233: 1-6, 1985.
68. R.P. Simon, N. Benowitz, R. Hedlund, and J. Copeland. The influence of the blood-brain pH gradient on brain phenobarbital uptake during status epilepticus. *J. Pharmacol. Exp. Ther.* 234: 830-835, 1985.
69. O.F. Woo, N.L. Benowitz, F.W. Bialy, and J.W. Wengert. Atrioventricular conduction block caused by phenylpropanolamine. *JAMA* 253: 2646-2647, 1985.
70. Participants: N. Benowitz, M. Feinleib, C. Feyerabend, et al. Is there a future for lower-tar-yield cigarettes? *Lancet* November 16: 1111-1114, 1985.
71. Benowitz, N.L. Increased 24-hour energy expenditure in cigarette smokers. (Ltr.). *N. Engl. J. Med.* 314: 1640-1641, 1986.
72. N.L. Benowitz, P. Jacob III, L. Kozlowski, and L. Yu. Influence of smoking fewer cigarettes on exposure to tar, nicotine, and carbon monoxide exposure. *N. Engl. J. Med.* 314: 1310-1313, 1986.
73. N.L. Benowitz, P. Jacob III, L. Yu, and R. Talcott. Reduced tar, nicotine and carbon monoxide exposure while smoking low and ultra-low yield cigarettes. *JAMA* 256: 241-246, 1986.
74. N.L. Benowitz, R.T. Jones, and P. Jacob III. Additive cardiovascular effects of nicotine and ethanol. *Clin. Pharmacol. Ther.* 40: 420-424, 1986.
75. N.L. Benowitz, R.P. Simon, and J.R. Copeland. Status epilepticus: Divergence of sympathetic activity and cardiovascular response. *Ann. Neurol.* 19: 197-199, 1986.
76. G.B. Gori, N.L. Benowitz, and C.J. Lynch. Mouth versus deep airways absorption of nicotine in cigarette smokers. *Pharmacol. Biochem. Behavior* 25:1181-1184, 1986.
77. P. Jacob III, N.L. Benowitz, L. Yu, and A.T. Shulgin. Determination of nicotine N-oxide by gas chromatography following thermal conversion to 2-methyl-6-(3-pyridyl)-tetrahydro-1,2-oxazine. *Anal. Chem.* 58: 2218-2221, 1986.
78. J. Rosenberg, P. Pentel, S. Pond, N. Benowitz and K. Olson. Hyperthermia associated with drug intoxication. *Crit. Care Med.* 14:964, 1986.
79. N.L. Benowitz, P. Jacob III, and C. Savanapridi. Determinants of nicotine intake while chewing nicotine polacrilex gum. *Clin. Pharmacol. Ther.* 41: 467-473, 1987.
80. N.L. Benowitz, T. Lake, K.H. Keller, and B.L. Lee. Prolonged absorption with development of tolerance to toxic effects following cutaneous exposure to nicotine. *Clin. Pharmacol. Ther.* 42: 119-120, 1987.
81. P. Jacob III, B.A. Elias-Baker, R.T. Jones, and N.L. Benowitz. Determination of benzyolecgonine and cocaine in biologic fluids by automated gas chromatography. *J. Chromatogr.* 417: 277-286, 1987.
82. K-P. Juenemann, T.F. Lue, J. Luo, N.L. Benowitz, M. Abozeid, and E.A. Tanagho. The effect of cigarette smoking on penile erection. *J. Urology*, 138: 438-441, 1987.
83. B.L. Lee, N.L. Benowitz, and P. Jacob III. Influence of tobacco abstinence on the disposition kinetics and effects of nicotine. *Clin. Pharmacol. Ther.* 41: 474-479, 1987.
84. B.L. Lee, N.L. Benowitz, and P. Jacob III. Cigarette abstinence, nicotine gum and theophylline disposition. *Ann. Int. Med.* 106: 553-555, 1987.
85. C.J. Lynch and N.L. Benowitz. Spontaneous brand switching: Consequences for nicotine and carbon monoxide exposure. *Am. J. Public Health* 77: 1191-1194, 1987.
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